

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: PARTICLE BEAM PROCESSING APPARATUS

the specification of which ☐ is attached and/or ☒ was filed on November 5, 1999 as United States Application Serial No. 09/434,380 or PCT International Application No. _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate or § 365(a) of any PCT international application(s) designating at least one country other than the United States, listed below and have also identified below, any foreign application(s) for patent or inventor's certificate, or any PCT International application(s) having a filing date before that of the application(s) of which priority is claimed:

Country	Application Number	Date of Filing	Priority Claimed Under 35 U.S.C. 119
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

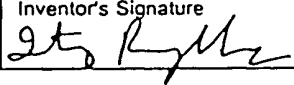
Application Number	Date of Filing

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT International application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application(s) and the national or PCT International filing date of this application:

Application Number	Date of Filing	Status (Patented, Pending, Abandoned)

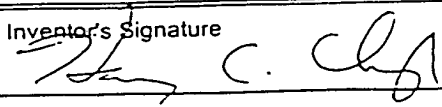

I hereby appoint the following attorney and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P., Douglas B. Henderson, Reg. No. 20,291; Ford F. Farabow, Jr., Reg. No. 20,630; Arthur S. Garrett, Reg. No. 20,338; Donald R. Dunner, Reg. No. 19,073; Brian G. Brunsvold, Reg. No. 22,593; Tipton D. Jennings, IV, Reg. No. 20,645; Jerry D. Voight, Reg. No. 23,020; Laurence R. Hefter, Reg. No. 20,827; Kenneth E. Payne, Reg. No. 23,098; Herbert H. Mintz, Reg. No. 26,691; C. Larry O'Rourke, Reg. No. 26,014; Albert J. Santorelli, Reg. No. 22,610; Michael C. Elmer, Reg. No. 25,857; Richard H. Smith, Reg. No. 20,609; Stephen L. Peterson, Reg. No. 26,325; John M. Romary, Reg. No. 26,331; Bruce C. Zotter, Reg. No. 27,680; Dennis P. O'Reilly, Reg. No. 27,932; Allen M. Sokal, Reg. No. 26,695; Robert D. Bajefsky, Reg. No. 25,387; Richard L. Stroup, Reg. No. 28,478; David W. Hill, Reg. No. 28,220; Thomas L. Irving, Reg. No. 28,619; Charles E. Lipsey, Reg. No. 28,165; Thomas W. Winland, Reg. No. 27,605; Basil J. Lewis, Reg. No. 28,818; Martin I. Fuchs, Reg. No. 28,508; E. Robert Yoches, Reg. No. 30,120; Barry W. Graham, Reg. No. 29,924; Susan Haberman Griffen, Reg. No. 30,907; Richard B. Racine, Reg. No. 30,415; Thomas H. Jenkins, Reg. No. 30,857; Robert E. Converse, Jr., Reg. No. 27,432; Clair X. Mullen, Jr., Reg. No. 20,348; Christopher P. Foley, Reg. No. 31,354; John C. Paul, Reg. No. 30,413; Roger D. Taylor, Reg. No. 28,992; David M. Kelly, Reg. No. 30,953; Kenneth J. Meyers, Reg. No. 25,146; Carol P. Einaudi, Reg. No. 32,220; Walter Y. Boyd, Jr., Reg. No. 31,738; Steven M. Anzalone, Reg. No. 32,095; Jean B. Fordis, Reg. No. 32,984; Barbara C. McCurdy, Reg. No. 32,120; James K. Hammond, Reg. No. 31,964; Richard V. Burgujian, Reg. No. 31,744; J. Michael Jakes, Reg. No. 32,824; Dirk D. Thomas, Reg. No. 32,600; Thomas W. Banks, Reg. No. 32,719; Christopher P. Isaac, Reg. No. 32,616; Bryan C. Diner, Reg. No. 32,409; M. Paul Barker, Reg. No. 32,013; Andrew Chanhon Sonu, Reg. No. 33,457; David S. Forman, Reg. No. 33,694; Vincent P. Kovalick, Reg. No. 32,867; James W. Edmondson, Reg. No. 33,871; Michael R. McGurk, Reg. No. 32,045; Joann M. Neth, Reg. No. 36,363; Gerson S. Panitch, Reg. No. 33,751; Cheri M. Taylor, Reg. No. 33,216; Charles E. Van Horn, Reg. No. 40,266; and Linda A. Wadler, Reg. No. 33,218; and Jerry Soegeng, Reg. No. 44,345. Please address all correspondence to FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P. 1300 I Street, N.W., Washington, D.C. 20005, Telephone No. (202) 408-4000.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full Name of First Inventor Imtiaz Rangwalla	Inventor's Signature 	Date 11/4/2000
Residence 1 Iron Gate Drive, Andover, MA 01810	Citizenship U.S.	
Post Office Address		


Listing of Inventors Continued on Page 2 hereof. ☒ Yes ☐ No

Listing of Inventors Continued From Page 1 hereof.

Full Name of Second Inventor Harvey Clough	Inventor's Signature 	Date 1/4/2000
Residence 100 Tucker Farm Road, North Andover, MA 01845		Citizenship U.S.
Post Office Address		
Full Name of Third Inventor George Hannafin	Inventor's Signature 	Date 1/4/2000
Residence 21 Sandalwood Road, Hudson, NH 03051		Citizenship U.S.
Post Office Address		

FORM PTO-1595
1-31-92RECORDATION FORM COVER SHEET
PATENTS ONLYU.S. Department of Commerce
Patent and Trademark Office
Attorney Docket No. 5716.0008To the Honorable Commissioner of Patents and Trademarks:
Please record the attached original documents or copy thereof.

ATTN. BOX ASSIGNMENTS

1. Name of conveying party(ies): Imtiaz Rangwalla, Harvey Clough, and George Hannafin		2. Name and address of receiving party(ies): Name: Energy Sciences, Inc.	
Additional name(s) of conveying party(ies) attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Internal Address:	
3. Nature of conveyance:		Street Address: 42 Industrial Way	
<input checked="" type="checkbox"/> Assignment	<input type="checkbox"/> Merger	City: Wilmington	
<input type="checkbox"/> Security Agreement	<input type="checkbox"/> Change of Name	State: Massachusetts	Zip Code: 01887
<input type="checkbox"/> Other:		Additional name(s) & Address(es) attached?	
Execution Date: November 5, 1999.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application: November 5, 1999			
A. Patent Application Number(s): [Insert]		B. Patent Number(s): [Insert]	
Additional numbers attached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
5. Name and address of party to whom correspondence concerning document should be mailed:		6. Total number of applications and registrations involved: [Enter Number]	
Name:		7. Total fee (37 CFR 3.41): \$40	
Internal Address: FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.		<input checked="" type="checkbox"/> Enclosed (Please charge deficiency to deposit account)	
Street Address: 1300 I Street, N.W.		<input type="checkbox"/> Authorized to be charged to deposit account	
City: Washington, D.C.			
State:	Zip: 20005-3315	8. Deposit Account No.: 06-0916	
9. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.			
Jemy Soegeng		 Signature	
		November 5, 1999 Date	
Total number of pages including cover sheet, attachments and documents: 2			

ASSIGNMENT

WHEREAS WE, the below named inventors, (hereinafter referred to as Assignors), have made an invention entitled:

PARTICLE BEAM PROCESSING APPARATUS

for which we executed an application for United States Letters Patent concurrently herewith or filed an application for United States Letters Patent on _____, 19__ (Serial No. _____), we hereby authorize our attorney to insert the Serial Number when known; and

WHEREAS, ENERGY SCIENCES, INC., a corporation of MASSACHUSETTS, U.S.A., whose post office address is 42 Industrial Way, Wilmington, MA 01887 (hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that for and in consideration of the sum of One Dollar (\$1.00) in hand paid and other good and valuable consideration the receipt of which from assignee is hereby acknowledged, we, as assignors, have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the assignee, its lawful successors and assigns, our entire right, title, and interest in and to this invention, provisional application Serial No. _____, filed _____ (if any), and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, and all rights to claim priority on the basis of the above provisional application (if any), as well as all rights to claim priority on the basis of this application, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, WE HEREBY covenant that we have the full right to convey the interest assigned by this Assignment, and we have not executed and will not execute any agreement in conflict with this Assignment;

AND, WE HEREBY further covenant and agree that we will, without further consideration, communicate with assignee, its successors and assigns, any facts known to me respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said assignee, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the assignee, its successors and assigns.

IN TESTIMONY WHEREOF, we have hereunto set our hands.

County of MIDDLESEX
State of MASSACHUSETTS

ss.

IMTIAZ RANGWALLA
1 Iron Gate Drive
Andover, MA 01810

[Signature]
November 5, 1999

Date:

Subscribed and sworn to before me this 5th day of November 1999.
[Signature] Notary Public

DONALD BLOM, JR.
NOTARY PUBLIC

My commission exp. Aug 1, 2000

FINEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP, • WASHINGTON, D.C.

FHFGD June 97

SOLE/JOINT INVENTION
(Worldwide Rights)

County of MIDDLESEX

ss.

HARVEY CLOUGH
100 Tucker Farm Road
North Andover, MA 01845

[Signature]
Date: November 5, 99

State of MASSACHUSETTS

Subscribed and sworn to before me this 5TH day of November, 1999
[Signature], Notary Public

DONALD BLOM, JR.
NOTARY PUBLIC

County of MIDDLESEX

ss.

GEORGE HANNAFIN
21 Sandalwood Road
Hudson, NH 03051

[Signature]
Date: November 5, 99

State of MASSACHUSETTS

Subscribed and sworn to before me this 5TH day of November, 1999
[Signature], Notary Public

DONALD BLOM, JR.
NOTARY PUBLIC
My commission exp. Aug. 4, 2000